

USACE Remediation System Evaluations (RSEs): Building on More Than a Decade of Experience

Dave Becker

Geologist

US Army Corps of Engineers
Environmental and Munitions Center
of Expertise

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Overview

- *Presentation reflects my personal observations and thoughts, not those of the Army or USACE*
- Key Aspects of Optimization Based on USACE Experience over Past 12 Years
- Planned Assessment for Army Cleanup Programs
- Optimization & Sustainability – A Natural Combination
 - ▶ USACE Sustainability Initiatives
 - ▶ Incorporating Sustainability into RSEs
- Future Issues



Key Aspects: RSE Team Composition

- Senior Personnel
 - ▶ Multi-Disciplinary – Engineering, Hydrogeology
 - ▶ Experienced
 - ▶ Knowledgeable in Alternative Technologies
- Independent from Project Team



Key Aspects: Technical Considerations

- Evaluate Site Conceptual Model, Site Goals, Closure/Exit Strategy
 - ▶ Must be Holistic Evaluation
- Technical Review of Operational Data
 - ▶ Look for Problems
 - ▶ Amazing What is In Details
- Verify Recommendation is Viable, Consistent with Site Conditions



Key Aspects: Technical Considerations 2

- Suggest Approach to Implementation
- Provide Realistic, Inclusive Cost Estimates
- Follow-Up
 - ▶ Verify Project Team Understands RSE Recommendations
 - ▶ RSE Team to Facilitate Implementation of Recommendations



Key Aspects: Human Considerations

- Positive, Forward-Looking Approach
 - ▶ Emphasize Change is Expected and Inevitable
- Seek and Value Project Team's Input from Start
- Communicate, Educate
- Consider Stakeholders
 - ▶ Invite to Observe, Participate
 - ▶ Emphasize RSE = Balance of Effectiveness and Cost



Key Aspects: Contract Considerations

- Include Contract Provisions/Options for Implementing Optimization Changes
 - ▶ Budgeted Item
- Technically Qualified Contractors
 - ▶ Engineering & Scientific Capabilities On-Staff or through Partner



Key Aspects: Contracting Considerations 2

- Fixed-Price, Performance-Based Contracts
 - ▶ Not Gov't Responsibility to Optimize Cost, but No Reason to Waste \$\$
 - ▶ Government Estimate that Accounts for Optimization
 - Optimization before PBCs
 - ▶ Government Must Assure Adequate Performance Since It Retains Liability
 - Typical Five-Year Contract Life
- Can Other Contract Approaches with Optimization Outperform PBC on Long-Term Remedial Project?



Key Aspects: Institutional Issues

- Management Should:
 - ▶ Have a Clear Strategic Vision for Restoration Program – Time or Money Saved?
 - ▶ Have a Program of Periodic Independent Optimization /Performance Evaluations
 - ▶ Perform Oversight/Monitoring of Implementation of Optimization Recommendations



Key Aspects: Institutional Issues 2

- Management Should Also:
 - ▶ Measure Team Performance, Reward Efficiency
 - ▶ Offer Team Incentives for Implementing Optimization Recommendations
 - ▶ Provide Funding for Conducting Optimization and Implementing Recommendations – Pay Now or Later



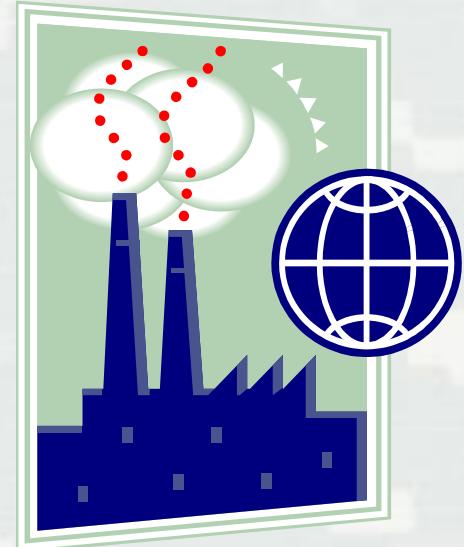
Current USACE EM CX Activities

- USACE EM CX Performing Study of Optimization Potential for Army Program
 - ▶ Assess Program Opportunities and Priorities Based on Historical Observations
 - ▶ Recommendations for Programmatic Approaches



Optimization and Sustainability

- ▶ Evaluate Carbon Emissions, Resource Use, Environmental Impact, Other Risks in Alternative Technologies
- ▶ Factor in Recommendations
 - Alternative Energy Sources, Energy Recovery
 - Recycling
 - Worker, Community Risk



Optimization and Sustainability 2

- USACE / Army Sustainability Framework
 - ▶ Interim Guidance, March 2010
 - ▶ Incorporate Sustainability Considerations Through Entire Life-Cycle of Project
 - ▶ Incorporate Sustainability into Existing Processes, incl. RSEs
 - ▶ RSE Checklists to Include Sustainability Issues
- Recent Demonstrations of Sustainability Analysis as Part of Army Optimization Studies
- Upcoming Army-Sponsored Study of Sustainability Integration into all Remedial Phases, including Optimization



Future Areas of Emphasis

- Exit Strategies
 - ▶ Encourage Their Development
- Data Management for the Long Haul
 - ▶ Preserve Data Integrity over Decades
- Remediation Risk Management
 - ▶ Weigh Risks of Engineering Failure in Assessing Optimization Alternatives



Summary

- Lessons Learned over 10+ Years of RSEs
 - ▶ Independent Expert Team
 - ▶ Holistic, Constructive, Realistic, Recurring, Inclusive, and Positive Approach
 - ▶ Consider Contracting Approach, Incentives
 - ▶ Top-Down Driven: Oversight, Follow-up
 - USACE Providing Input to Army
- Sustainability to be Integrated with RSEs
- Future Emphasis on Exit Strategies, Data Integrity, Remedy Risk Management

